

## ABSTRACT

In the present invention the basic detection and interruption components of an Immersion Detection Circuit Interrupter (IDCI), in combination with the line, neutral and shield conductors of an extension or appliance cord provides a new improved type of detector, a Leakage Current

- 5      Detector Interrupter (LCDI) which interrupts current to a load when current leakage is detected between the line or neutral conductors of the cord and the shield conductor. The new improved LCDI detector provides, either singularly or in combination, the following advantages: Prevents the LCDI from being reset should the device become inoperative (reset lockout); Provides an indication of the integrity of the shield in the extension or appliance cord; Tests the integrity of
- 10     the shield within the extension or appliance cord, in addition to testing the functionality of the LCDI; Interrupts current to the load if an electrical connection is detected between the shield and neutral, or the shield and ground, in addition to the existing detection of leakage current from the phase conductor; Allows the LCDI to trip during an open neutral condition by utilizing the ground connection as a return wire for the trip coil; and/or Provides immersion detection at the
- 15     receptacle end of the extension cord in addition to protection from leakage faults.